A CONTRIBUTION TO THE THEORY OF
COMPETITIVE PRICE

SUMMARY

The method of stating the laws of competitive price, 747. — Economics as a theory of limits, 750. — The factor of time, 751. — Fixed capital and joint cost, 754. — Price is indeterminate, 755. — Capital with limited mobility, 760. — Factors affecting extent of price cutting, 762. — Agreements and potential competition, 767. — Conclusion, 770.

IN formulating economic laws, the student has the choice of two policies. He may make the statement in the simplest terms, leaving out most of the disturbing elements, which must then appear as forces causing variations from the standard. Or he may so state his law as to include as many of these disturbing elements as possible, thus sacrificing simplicity, but gaining in completeness, and cutting down the number of necessary exceptions. Such a formula includes automatically the simpler cases covered by the other type of statement. Thus the physicist's parallelogram of forces needs no readjustment in the limiting case of two forces acting in the same line, and our mathematical friends frame an equation for the ellipse which simplifies itself automatically when the two foci coincide and the ellipse becomes a circle. This type of law is characteristic of the more exact sciences, while students of economics still seem to prefer treating the ellipse as an exception to the circle rather than the circle as a simple form of ellipse. We are too easily content with treating inconvenient facts as exceptions to static law, rather than earnestly undertaking to unearth the laws that govern

these facts — laws which must contain the static law as the ellipse contains the circle.

It is hardly necessary to say that this implies no criticism of the abstract method of static theory within its proper field. None will deny that it is " necessary for man with his limited powers to go step by step, breaking up a complex question, studying one bit at a time, and at last combining his partial solutions into a more or less complete solution of the whole riddle." [1]   But it is the last step that costs. It takes resolution to go forth from the ease and beautiful simplicity of a well-formed hypothesis and struggle with amorphous facts. It takes more than resolution to win through to some degree of order and of truth. The question at issue is how to attack the problems of dynamic theory: what method to use in trying to bring order out of those phases of the actual world which the static hypothesis was not framed to cover. If one were to say that the same abstractions used in static theory would never do as a basis for dynamic studies he would rouse about as much interest as by stating that black is not white. And yet to many people " theory " seems still to mean "static theory " and dynamic studies seem sometimes in danger of degenerating into mere exceptions to static law.

Even Marshall, who has said that " every plain and simple doctrine as to the relations between cost of production, demand and value is necessarily false," [2] still keeps touch not only with the static method but with static conclusions. Shreds of discarded hypotheses still cling to his argument and he still gives us deviations from static law at points where we had reason to expect something more radical.

---

[1] Marshall, Principles of Economics, Book V, chap. v, § 12.

[2] Ibid.   The writer's own indebtedness to Marshall is so great and so obvious as hardly to call for acknowledgement in detail.

Is it possible that the loss of prestige from which economic theory has suffered comes partly from the vast number and importance of these exceptions ? Where exceptions rule, the theorist is no better off than his opponent: he is reduced, if not to the level of the man in the street, at least to that of any educated and informed man of no special theoretical training. And if the exceptions grow, as they seem to be growing with the increasing complexity of business relations, what wonder if many economists turn aside from theoretical study ? All the more reason, then, for a determined effort to make room within the theories for as many as possible of the obstinate special cases and exceptions. The tendency of progress in our theoretical study is all in this direction. Thus the statement of the quantity theory of money with its blanket phrase " other things being equal," gives way to the detailed statement and quantitative study of the chief of these " other things " in the " equation of exchange." Could not the method of stating the law, or laws, of competitive price be developed in the same direction with advantage ?

Men have a way of ignoring things until an extreme case forces them into the field of attention, then recognizing the one extreme case as an exceptional one, and finally discovering that all other cases are like it, to some extent. The economic peculiarities of specialized capitals and " general expenses " furnish a case in point. We learned first that a railroad is not like a soap factory; the next step was to learn that a soap factory is more or less like a railroad, and that the things we thought peculiar to railroads are, in fact, wellnigh universal. The discovery of " potential competition " as a check on trusts may lead to the further discovery that most competition is potential, active competition being limited in many fields by understandings and informal agreements.

Economics as a Theory of Limits

The study of these facts is dynamic theory, and in approaching it, it may be well to " stop, look and listen "; and even to ask what economic theory really is before asking how dynamic theory is different from static.   Economic theory is essentially a theory of limits. Strictly speaking and with a view to practical applications, it is not so safe to say that competitive price tends to equal the expense of production as to say that the difference between competitive price and expense of production tends to become smaller than any assigned quantity.   Of course this depends on the assumption that the supply can be adjusted with infinite delicacy.   If capital and labor can come and go in infinitely small instalments, it makes no practical difference whether we say " price equals cost " or " price approaches cost as a limit "; and the static hypothesis furnishes these conditions by assuming perfect mobility of labor and capital.

But when we cut loose from this assumption and begin to study " dynamic disturbances and friction," we enter a world to which the theory of limits can no longer be applied in the same simple way.   Capital and labor are mobile, but not ideally so; they come and go under difficulties and in instalments of some size. Suppose a man trying to put just five pounds of water into a pail.   He cannot do it exactly, perhaps, but he can come so near that he cannot measure the difference. But five pounds of potatoes ?   If he must put in at least five pounds, all he can be reasonably sure of is that he will not go over the limit by more than the weight of the smallest available potato.   So it is with capitalistic production.   Infinitesimals are clearly out of the question when the marginal increment of capital

consists in double-tracking a railroad or building a modern steel plant. Even a new grocery store or barber shop in a small town may make just as big an impression on the local market as the steel plant on the output of the nation.

Aside from these facts, the chief peculiarity of dynamic theory is its dependence on time, in contrast to static theory, which is virtually timeless. Let us consider some of the simpler consequences of this fact before going on to the more complex problems of fixed capital and joint-cost production. And always let us keep in mind the attitude of the mathematician seeking an equation that will include under a single statement the ellipse as well as the circle.

The Factor of Time

We have, apparently, several " laws of normal competitive price." In the case in which different units of output involve different expenses of production due to causes that are permanent and inevitable, we have one statement of the normal level of prices, and in the case in which different producers have, from avoidable causes, different expenses of production, we have two other statements. There is a short-time tendency of price toward the level of the expense of producing the article in question in the establishment of a rather inefficient producer who is, for the time being, the marginal one. And there is a long-time tendency of price toward the expense of the most efficient methods of production, which we consider the less efficient must imitate or be displaced by the enlargement of the superior establishment.

These three laws can, if desirable, be included under the one statement that within any given period of time,

the normal price for that period is equal to the highest unit expense that must needs be incurred in order to complete, at the end of that period, a rate of output large enough to bring the price down to the level of the aforesaid highest expense.[1] This form of statement may not be suited to the popular lecture platform, but it includes all three of the cases above mentioned, in a way that shows conclusively (if there were any doubt in the learner's mind) that the laws governing these cases are not inconsistent nor even disconnected from each other, but phases of one principle.

By " normal price " is meant a price such that if the actual price goes lower than the normal, some one can " make money " (or avoid loss) by doing something that will tend to raise it, and if the actual price is higher,

[1] The objection might be raised that the above method of formulating the law of price exposes itself unnecessarily to the charge of circular reasoning which arises (mistakenly) out of the undeniable facts that both selling price and marginal expense of production are variable functions of the same third variable, supply; while the direction and rapidity of changes in supply are a function of the difference between the marginal expense of production and the selling price.

To put it mathematically, let P = price, S = rate of supply,
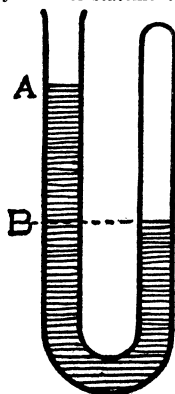
E = expense and T = time.

Then $P = f_1(S)$ and $E = f_2(S)$ and also $\Delta S = f_3(P - E)\,\Delta T$, an expression which we know goes to zero if S increases indefinitely.

Or, if we put $S_1 + \Delta S_1 = S_2$, and $T_1 + \Delta T_1 = T_2$ and substitute for ΔS_1, P and E their functional equivalents, we have $S_2 = S_1 + f_3 \left\{ f_1(S_1) - f_2(S_1) \right\} \left\{ T_2 - T_1 \right\}$.

If that be inviting the charge of circular reasoning, the difficulty is inherent in the facts, and we can gain nothing by shirking the issue under any form of statement. Indeed, if we do evade the issue, we are fleeing from a dragon which may devour other victims. We lose an opportunity to impale a fallacy which may be strong enough to discredit much perfectly valid reasoning.

Here is no more circular reasoning than would be involved in the mechanical explanation of the exact volume of air in the closed end of a curved tube (see diagram) after a given quantity of water has been poured in the open end.

The volume of air depends on the pressure exerted, measured by the height of the column of water A B, which depends in turn on the law governing the manner in which the pressure of the air increases in response to a reduction of its volume. But the apparent circularity of this reasoning does not prevent the water in the tube from finding a level, quite definitely determined by forces beyond its own control, a level which a physicist could calculate in advance with perfect accuracy. Nor is the writer aware that the physicists are cutting each other's throats over the rival claims of the column-of-water theory and the elasticity-of-air theory as explanations of the problem.

a similar " economic force " will be set to work whose effect must be to lower it.   Therefore we must specify a period of time.   Suppose that within a year's time it will be impossible, without producing some cloth that costs 10 cents per yard to weave, to satisfy the demand of those willing to pay that much for the service of weaving.   What matter if the best plants can do the work for 7 cents, and what matter if in ten years' time these plants will have been enlarged and others will have copied their methods until the whole demand can be satisfied at the lower price ?   What matter if there be a further tendency for the expense to fall still lower as the best methods are improved upon ?   It remains true that if, for any reason, the price be lowered below 10 cents within the year, the forces of economic equilibrium will act at once to raise it again to 10 cents, not to lower it still farther.   This price appears to satisfy the requirements of " normal price " so long as the calculations are limited to one year's time.   It would seem that in this case the force of competition, tending to bring price down to 7 cents per yard, is not nullified by obstructions, but rather reversed in its effect by the conditions which govern it.   With reference to the ten-year period 7 cents per yard is the marginal expense of weaving, while with reference to a period of one year, 10 cents per yard is the marginal expense.

The static state knows no limits of time, and hence differences in costs do not exist for it, so far as they spring from innovations, or can be eliminated by imitation, or by the absorbing of weak enterprises and the extension of strong ones.   The only differences to be recognized by static theory are permanent ones.[1]   The

---

[1] Hence the application of the above law to a static state is much simplified and quite obvious.   This is equally true, whether we do or do not choose to count rents and royalties among the expenses of production.   Cf. Marshall, " Principles of Economics, Book V, chap. v.

student of actual conditions, however, is dealing with disturbances where time, and the speed with which actions and reactions occur, is of the utmost importance. The rate at which demand can grow, the periods over which it fluctuates, the time needed to enlarge, reduce or improve the facilities of production, and even the speed with which a reduction of price reacts on the amount sold — all these facts are grist for his mill. He must study everything in terms of time.

FIXED CAPITAL AND JOINT COST

The most obstinate cases remaining outside the law of price as thus formulated are those of joint-cost production, either of different articles or of different units of a homogeneous output,[1] especially where the joint outlay represents an investment of highly specialized capital. Are these facts to be treated as mere disturbances and their effects measured as variations from a static norm, or can a law be framed broad enough to include them ?

In the first place, the writer doubts if even a stationary state would be free from the effects of such phenomena, if we were to imagine such a state developed out of the present condition by stopping the processes of change and giving the factors of production unlimited time to find their level.[2] Some forms of capital cannot be shifted without loss, no matter how much time is allowed for the piecemeal transfer of the depreciation fund; a railroad embankment, for instance, or a tunnel.

---

[1] The writer does not insist on this extension of the term " joint cost." The reader may, if he chooses, think in terms of prime cost and supplementary costs or of fixed and variable outlays, and the argument will be unaffected. Believing that the same principle governs, whether the product is one thing or many, the writer feels that it would promote clear thinking to let this unity appear in the terms used and so he prefers one word to cover both cases.

[2] This is not just the assumption of the perfect " static state," though it has been used sometimes for illustrative purposes as a working approximation.

Moreover in any large industrial plant, as well as in a railroad, the depreciation account is managed with reference to keeping the value of the plant undiminished in its original use and in continuous operation — not with reference to scrapping the entire outfit at some time and building new. There is no moment in the normal career of a large manufacturing plant when it goes to pieces like the one-hoss shay, and the depreciation accounts are not accumulated with any such catastrophe in view. As a result, they would not be large enough at any time to rebuild the establishment entire, scrapping the original equipment and getting out without loss. Therefore in such cases producers would find it better to endure even permanently a loss of some part of the usual rate of income on their capital, rather than undergo the loss of a larger part of the value of the capital itself in shifting it to some other enterprise.[1]

Price is Indeterminate

Thus even in the longest of long runs we should be compelled to admit that, in some cases, price would be indeterminate between two levels, one high enough to attract new capital and labor into the business, and another lower level, at which some of what is already in

Exception may be taken to this form of statement by those who hold that capital is nothing other than earning power capitalized. Obviously, if this terminology be adopted the foregoing argument becomes impossible *in its present form*. But if the relation of expense to price is to have any meaning at all, the term " expense " must have some reference to the actual outlay involved in investment, and the result of changing the definition of capital would only be to shift the real issue over to the question of the normal relation between the earnings of capital and the expenses of reproducing it. And under this terminology, the entire argument of this paper could, if necessary, be restated without losing any of its validity. The question at issue is in part the same that is treated on pp. 285–288 of Professor J. B. Clark's Essentials of Economic Theory.

For the purposes of the present study, which is primarily from the individualistic standpoint, we may assume a rate of interest, and not undertake here the solution of the objection that the cost of reproducing capital includes interest on other capital. This paper is not a study of the theory of interest.

would be forced out.   For we must admit that a certain amount of excess producing capacity might continue indefinitely.   It is only by virtue of assuming a demand that grows, but never shrinks, that the economist can say that " price tends to equal the expenses of production, including interest on investment."

Even Marshall's argument proves no more than this, tho it appears to carry much farther.   If we look for an exact definition of the expenses of production which govern normal price, we become involved in a confusion quite foreign to Marshall's usual reasoning.   At one point we read " the marginal supply price is that, the expectation of which in the long run just suffices to induce capitalists to invest their material capital." [1] Obviously, it is growing investments to which this statement applies.   But two pages farther on we read: " Price must be sufficient to cover the expenses of production of those producers who have no special and exceptional facilities; for if not they will withhold or diminish their productions and the scarcity of the amount supplied, relatively to the demand, will raise the price.   Again: [2] " Supplementary costs are taken to include standing charges on account of the durable plant . . . they must be completely covered by it (selling price) in the long run; for if they are not, production will be checked."   Apparently these costs are taken as identical with the " marginal supply price " of new investments, cited in the preceding paragraph. But farther on we read: [3] " For the capital already invested in improving land and erecting buildings, and in making railways and machinery, has its value determined by the net income (or quasi-rent) which it will produce; and if its prospective income-yielding power

---

[1] Principles of Economics, 5th ed., p. 497, cf. p. 359.

[2] Ibid., pp. 359–360.   [3] Ibid., p. 593.

should diminish, its value would fall accordingly and would be the capitalized value of that smaller income after allowing for depreciation." Accepting this last, supplementary costs become equal to whatever the business can earn over prime costs, and the minimum limit on price turns into a vanishing quantity.

If the value of invested capital is derived from its earning power, obviously there is no meaning in the statement that the price of the product is governed by the necessity of earning the current rate of interest on the value of the capital. And if the " interest " which governs the selling price is the interest necessary to attract new investments of capital, obviously it will only be effective in a condition of growing demand.[1] Marshall sees that if price is governed by expense the governing expense must include no land rent, else there is circular reasoning.[2] Apparently he does not appreciate the consequences of the fact that he has himself placed standing investments of capital on the same footing as land and thus ruled their earnings out of the category of marginal expenses of production.

So much for the question whether price may remain permanently too low to pay interest on the full amount of the investment, if some of that investment is irrevocably fixed.

But in actual business the important question is not whether capital can move without loss if an indefinite time is allowed, but whether it can move fast enough to keep pace with the fluctuations of business. And a very great part of business capital is fixed with sufficient permanence so that all it can do in a period of depression is to wait for the turn of the wheel. With respect

---

[1] This statement does not of course allow for the fact already mentioned that renewals have " supply prices " like new investments, so that the " depreciation fund " may be shifted from an unprofitable enterprise.

[2] Op. cit., p. 499, cf. p. 593.

to the periods covered by the fluctuations of prosperity in individual businesses, or by our more or less regular cycles of general activity and stagnation, such capital is fixed. The result is that the most pessimistic investor cannot withdraw such capital from a business, once it is in, while the most optimistic can always put in more. The level of such investments is like the maximum indicator of a self-recording thermometer. During considerable intervals it stands as a monument to the warmth of past enthusiasms, the summit of past hope. Thus periods of excess producing capacity are normal to modern business even tho the capacity is not too great for the demand of active seasons. This is true of so many businesses that it begins to appear virtually a universal condition varying only in degree. The structure of an ordinary retail store is fixed capital, while the fact that joint outlays affect the price problem even in retail trade is evidenced by the discrimination and higgling that are the vexation of the tourist in Europe and the chief business in life of the bazaar trader of the Orient.[1]

The typical example of capital which must be held partly idle through regularly recurring periods of slack demand is the plant of an electric light and power company, which must be in " readiness to serve " a " peak load " far greater than the average consumption, and which cannot store its service, even for a day. Of course the times and seasons of the daily and yearly changes in demand can be pretty well calculated, making the problem much simpler than that of business cycles and other fluctuations of an irregular sort. And of course the problem of charges for electricity is not the problem of competitive price. But the bottom

---

[1] As a further instance of the effects of joint cost, the writer recently found that a firm was selling the same grade of candy for 35 cents per pound, in bulk, or 55 cents per pound in boxes. Rather an expensive box !

facts of the situation are the same. Public service companies make low rates for current taken at times of the day when demand is slack, to encourage a more steady and therefore more efficient use of the plant. The United States Steel Corporation has attempted the opposite policy of " steadying " prices. Competition, again, tends to lower them sharply in slack seasons. Which is the wisest plan ? It is a suggestive comparison.

To what level, in these circumstances, does active competition tend to bring prices ? If prices are above the total expense of production in marginal establishments [1] there is an obvious force set in motion to lower them. To be sure, if business men were perfectly rational and ideally well-informed, they would not tie up capital in new fixed plants [2] unless the returns more than covered the outlay over the whole period of one of our business cycles. But then, if business men were all thus prescient, the great cycles would not happen. If we assume the cycles, we must also assume their causes, so far as we know them, including as one of these the behavior of the business man who invests as long as prices more than cover outlays, even tho it be at the high tide of prosperity. Under active competition, price tends to be not higher than the expenses of production, in the sense that if it does go higher, a force is set in motion to lower it.

When we come to the forces tending to raise prices when they have gone unduly low and to study the level at which these forces begin to act, the problem is more complicated. Assuming active competition and no collusion of any sort, we may say that even when unused capacity sends prices below the cost level, competitive

---

[1] Defined with reference to the period of time in question, as stated on p. 751 above.

[2] Fixed, in the sense that they cannot be shifted without serious loss within the period of a single swing of the pendulum of business activity.

policy shows no force acting definitely to reduce the excess supply, until they go below the level that affords no return on the specialized plant but merely covers the variable expenses, including interest on such capital as can be shifted without loss within the time limits of the problem. This capital would be, roughly, the same that is commonly classed as " working capital " by business men. At this point some plants must needs be partially or wholly closed, and the fall in prices checked, tho it might not be stopped until some establishments well above the margin had temporarily closed down, the price going below their variable expenses.[1]   Indeed, if the fall in demand be only sharp enough, there is no assignable minimum for the temporary fall in prices, short of the variable expenses of the most efficient producers.

CAPITAL WITH LIMITED MOBILITY

Some further refinements might well be added to this statement. In the first place, it fails to take into account the fact that some capital is strictly fixed, while some could be moved with a certain loss to the owner. For capital of this latter sort, earnings could never quite reach the zero point without an exodus that would be somewhat less disastrous than a shutdown. To include all varieties of capital under a general statement, we might say that the minimum would be set at

[1] Strictly speaking, even the permanent downward tendency of prices would not be entirely stopped if there were so much difference between the efficiency of the poorest producer and the most efficient ones that the latter could earn profits well above the general rate on their investment while the former was earning nothing at all above maintenance on his. A producer as inefficient as this, however, could not be even a marginal producer by the definition here adopted, but would be already below the margin, defining the latter with reference to a period of, say, five years or more. In such a case the " tendency to minimum cost " would operate unmodified. But a more typical condition in periods of depression is that in which even the best producers are not making profits enough to tempt them into extending their operations on a large scale.

the point where the loss of earnings of the whole enterprise (measured from the general rate as a standard) for the period covered by the calculations of the more foreseeing of the entrepreneurs in question, should be equivalent to the loss in the value of the capital resulting from a hasty transfer, plus the unavoidable loss of earnings in the interval before the transfer could be made complete. As the accuracy of this statement is no greater than the estimates of the future on which it all depends, it would be more curious than profitable to reduce it to a mathematical formula.

Moreover, the statement only applies in case the level of price as thus determined is high enough to afford some return to the more or less fixed capital. In practice, if the business men in question carried their calculations no farther ahead than, say, six years, assuming that by that time there would be a recovery from the depression in which they found themselves, and if the capital in question would lose 12 per cent of its value if transferred in four years' time or 24 per cent if transferred in two years, and if the rate of return be taken as 6 per cent, such capital might as well stay where it is and endure a total loss of earnings for the full six-year period. And if entrepreneurs were more optimistic as to the prospects of recovery, they might keep their capital in the business even tho it were much more mobile than these figures represent. Thus we find that in practice the first rough statement of the law is near enough to accuracy, for an equation one side of which depends on business men's power of prophecy.

Another complication arises from the fact that the waves of prosperity and depression have their effect on the cost of production itself. Running at part capacity raises unit costs. But this is chiefly because the bur-

den of joint outlays becomes heavier, and the greatest part of these have already been taken into calculation. Part of the loss may be borrowed from past or future through temporary economies in maintenance. What is left may be offset against the other kinds of losses in efficiency that arise from over-activity,[1] and the resultant may fairly be ignored. If it could be calculated in any given case, the result would be merely to increase or to minimize somewhat the quantitative variation in prices from one period to another, without affecting the qualitative statement of the forces that determine prices at either time.

Factors Affecting Extent of Price Cutting

But is there no way of judging how far toward this minimum limit the price is likely to fall in any given case ? One statement would be that the price must fall in response to a falling-off of demand until all the productive capacity is at work which can earn anything above variable expenses at the new price-level. But common experience testifies that mills begin running at part capacity long before prices reach this level.

The statement is hypothetical, based on the implied assumption (among others) that a cut in prices, no matter how small, will at once enable the producer who makes it to take custom away from his competitors and so must necessarily enlarge his net earnings if he had any at all to start with. The corresponding assumption of the static law of price has no need to specify any rate at which business can be captured, for static theory is timeless. But to make valid a parallel conclusion in dynamic theory, the premise must be specific as to time. If new business is slow in coming in, after a cut in prices,

---

[1] Discussed in Mitchell, Business Cycles.

the immediate result will be a falling off of revenue, not an increase.

Obviously, it is not possible to transfer the allegiance of customers in an instant by any cut, no matter how small, in prices. Some approach to this would be possible in articles of standardized quality easily tested, where competition centers in price. But wherever the buyer's opinion of quality is important, and cannot be verified before every purchase, it must depend on past experience and on advertising, and furnish an inertia too great to be quickly overcome by minor changes in the price of one or the other brand of commodity. The only customers who would be attracted would be those who were hesitating already; not those who had fairly strong opinions as to the relative merits of their favorite make of article. For such articles, any serious attempt to take business away from competitors involves the time and expense of an advertising campaign. But a period of depression is not the time when expensive tactics of this sort are much indulged in. Therefore producers of this kind of goods will probably rely merely on the customary channels of advertising and can expect only a relatively slow response to any cut in prices. And in proportion as the gains are slow in coming in, the prospect of retaliation must loom larger and the motive to price-cutting be weakened.

Another element affecting the extent of price-cutting is the fact, so far disregarded, that bankruptcy awaits those who fail to cover not merely the variable outlays but interest on bonds and notes as well. It is true that a receivership does not necessarily end the competition of a corporation, even tho it can never earn the full interest contracted for. And for purposes of static theory we may be justified in regarding interest on all capital as included in the expenses of production and

ignoring the different forms of ownership or credit obligation under which it is held. But the prospect of a receivership may have a very decisive effect on the immediate policy of any business manager, tho it works in devious ways that are hard to fit into any formula. Under one set of circumstances it might operate to check price-cutting and under other conditions it might precipitate a war. A producer whose solvency is in no immediate danger will be loth to begin a struggle which may end by sending prices no one knows how low. He will rather bear the evils that he has than fly to others that he knows not of, and will allow his plant to run at part capacity. But the dangerous man is the one who cannot adopt the Fabian policy without defaulting payment of his obligations. Perhaps his running expenses are high or he has mortgaged his property too heavily, or, worse still, he is called on to repay short-time loans which he has counted on being able to renew. In such a situation he cannot weigh the chances of retaliation; the prospect of renewed prosperity in a few years has no meaning for his present need. He will not even be deterred by the uncertainty whether he can enlarge his sales fast enough to save himself, any more than the uncertainty whether he can swim ashore or not will deter a man from jumping into the water if his boat is sinking.

If we can generalize at all as to this situation, it must be in the most indefinite terms. We may say that if the most efficient producers have borrowed conservatively, and the least efficient have been more reckless, the latter may go into receivers' hands without involving the leading establishments in anything that would amount to cut-throat warfare. But if there are among the efficient some who have used credit incautiously, the liability to heavy price-cutting is much increased,

especially if the plants of less technical efficiency have avoided the financial drag of heavy fixed interest charges.

It is thus not possible to say definitely that the behavior of prices is governed solely by the extent to which the demand has fallen off. But it is none the less obvious that this fact is the prime cause at work, and that those industries will suffer the greatest losses in which, beside the fact of highly specialized equipment, there are great fluctuations of demand. Probably the greatest fluctuations occur in the demand for durable capital goods, while luxuries take second place.

A further disturbance confronts us when we realize that the rock-bottom prices may not be made on all of the output, but higher ones may be charged in such sheltered nooks of the market as are not open to the full fury of the competitive struggle. Discrimination is one normal result of these conditions, wherever the nature of the product, the situation of markets, and the legal and ethical standards of business conduct are such as to permit it. However, as it depends on some parts of the market being sheltered, and so not fully competitive,[1] we are justified in excluding it from our type-case and giving it separate treatment.

We may note in passing, however, that the smaller the proportion of his business that is exposed to cut-throat competition, the more free a producer is to cut prices without fear of bankruptcy. If his necessary interest charges are assured by customers for whose business he need not fight, he may cut prices freely to

[1] This does not imply anything worthy the name of monopoly; merely local differential advantages of one sort or another, chiefly due to freight rates. These might be brought under the general theory of competitive price on the principle that active competition at Kokomo means potential competition at Pittsburgh, with the handicap of transportation costs weakening its effect. If the Kokomo price is a cut-throat price, the Pittsburgh price may yield more or less than a fair average return to the Pittsburgh producer, depending on the amount of protection the costs of carriage afford him.

get other business, down to the level of variable expenses.   But if his competitor is less fortunate, and is forced to compete actively for all or most of his trade, he cannot cut prices as low as this without going bankrupt, unless he happens to be entirely out of debt. Thus size is an advantage, apart from productive efficiency, and a big concern may drive to the wall a smaller one which is equally efficient, without ever cutting prices so low that they yield no return over the variable expenses of the business; for the smaller producer, whose costs may be just as low, cannot afford to cut prices all the way down to them.   In view of these facts, the statement that the " trust loses money in one place and makes it up in another " is hardly an accurate description, as the trust may not be really losing money anywhere, merely charging what the traffic will bear at every point.

To sum up, then: the extent of price-cutting depends, among other things, on the variability of the demand, the situation of both weak and strong producers with regard to credit obligations, and the nature of the product — whether such that competition centers chiefly in price, or in advertising, salesmanship and the building up of " good will."   In fact, it depends on so many things that it appears hardly worth while attempting to generalize further than to indicate the determining factors, leaving any special cases to be studied with whatever aid these general guide-posts may furnish.

So far as active competition goes, then, prices would seem to be indeterminate between the two levels suggested.   It will be noted that this indefiniteness vanishes if the element of specialized capital invested for the business as a whole be eliminated.   As this disturbing element gets smaller, the two levels approach each other, meeting in those rare cases usually taken as

points of departure in considering the law of price, viz: those in which unit costs are calculable, and either uniform or else governed by the law of diminishing returns.

But if normal competitive price is indeterminate over a zone which lies entirely below the level of expense of production, how can business continue ? In the first place all that is claimed is that if price does go above this level, that fact starts in motion a force acting to lower it; a force that necessarily takes time to work and might be prevented from ever attaining its result if progress went on without a check. Progress — growth of demand and improvements lowering expenses — is one saving grace in the situation. And it must also be remembered that so far we have only considered a state of ideally (or fiendishly) active competition, which is far from representing accurately the real state of business in these days of cosmopolitan friendships and long-distance telephones.

AGREEMENTS AND POTENTIAL COMPETITION

In practice, we observe that mills begin running on part capacity long before prices reach the low level suggested as a minimum limit. And we also hear of secret agreements, while tacit understandings are matters of common knowledge. In the steel industry there were the " Gary dinners," intended to meet the danger of cut-throat competition in a business whose producing capacity cannot help being in excess of the demand (at reasonable prices) for a considerable part of the time. And before that there were " unwritten laws " against using idle capacity to invade the field of competitors. The indefinite nature of such practices defies deductive analysis, while the many disturbing elements preclude

accurate inductive tests.   But the observer gains —
shall we call it an impression ? — that these things are
becoming more definite, regular and recognized, result-
ing in a condition that is hardly active competition, a
condition in which the real check on prices is that force
to which the name " potential competition " has been
given.   This not merely in the case of trusts, but as a
normal thing in the field of general industry.

Is the effect of potential competition any more
definite than that of the active variety ?   Provisionally,
we may say that so far as it operates at all, it tends to
eliminate profits save to producers whose methods are
at least reasonably efficient.   The expense of establish-
ing a new enterprise as a " going concern " is a handi-
cap, which will always serve to weaken the force of
potential competition and so protect the profits of the
most efficient producers already in the business.   There
are reasons for believing, also, that a system of agree-
ments checked by potential competition may not
always prove the most effective guarantee of increasing
what efficiency we possess.   Together with an obvious
stimulus to improvements, it may also involve quite
serious wastes.

Latent competition must lose most of its force unless
it sometimes become actual.   No proverb says that the
child who is told that his older brother was burnt,
dreads the fire.   But what if these bursts of active
competition end in merely initiating one new member
into the circle and again agreeing on prices that will
prevent any new intrusions for the time being ?   If the
old price was higher than active competition would
have brought about, there must have been some spare
capacity already in the business — a condition which
the new arrival would aggravate without suffering
from the painful corrective of a disastrous fall in prices.

If periodical over-investment is normal to a state of active competition, may not over-investment in such a case as this be, not periodical, but chronic ?   In this new state there is little room for elimination of the unfit save in the most extreme cases.   But there is no surer guarantee of inefficiency than a considerable number of producers, all working at part capacity and all earning at least interest on their investment.   And this is a kind of inefficiency of which the prospective competitor could take no advantage for it does not spring from poor facilities for production, but from a wastefully large amount of them.   Tho the existing plants, *as run*, are inefficient, no new enterprise could hope to be less so. In such circumstances is it not more nearly correct to say that the expense of production is raised to meet the price, rather than the price lowered to the level of the expense of production ?

This form of waste probably has its best chance to operate subtly in mercantile business.   Any one can tell if a factory is running on part time or running only part of its machines, and such a condition warns off possible invaders, but it is not equally obvious whether or not the middleman's rooms and office force, and his facilities for handling and storing his stock, are being worked up to their full capacity.   The retailer's capacity is per- haps even more elastic, and the entrepreneur's own time represents a general outlay which is usually important and is equally necessary for a small or a large volume of business.

Moreover, understandings as to prices are supposed to be particularly prevalent among middlemen, while the relatively small capital needed to enter such business makes it especially easy for new competitors to enter. Wherever the manufacturer succeeds in fixing the final selling price and the dealers' margins, we have a situa-

tion admirably calculated to multiply the number of dealers competing for sales at these fixed margins until earnings are reduced to a normal level by reducing the dealers' average turnover.   The American middleman is just now the target of the most serious accusations of inefficiency, beside which railroad rates and even crude farming methods sink into insignificance.   Can these facts have any connection with each other, and if so, is this a case in which agreements have resulted in over-crowding the business with competitors and so reducing efficiency all around ?

Conclusion

Summarizing now the main points in the foregoing argument, we may say that under dynamic (or actual) conditions, competitive price need not normally tend to equal expense of production, but may differ from it by some fairly definite amount.   And we have seen that there may be different marginal expenses of pro-duction and different marginal producers corresponding to different lengths of time covered by the study in question.   Taking fluctuations of demand as part of the " normal " data of dynamic economics, and interpreting " marginal expense " and " normal price " in terms of a length of time no greater than the usual run of these business cycles, certain conclusions as to " normal price " were reached.   Price tends to equal the expenses of production only if demand grows continuously or if the expenses are none of them " fixed."   In general, normal price under active competition is anything from the amount needed to cover total expenses in marginal establishments down to the level of " prime " or variable costs to the more efficient producers.

However, the typical condition in businesses of large fixed investment is not one of " active competition " in the strict sense, but is coming to be more and more a condition of tacit understandings if not agreements, in which the true force governing prices is that of " potential competition." The latter does tend to bring the level of prices to the level of the total outlay involved in production, but the combination seems likely to produce a certain amount of waste. With either kind of competition there is normally a temptation to discrimination to be dealt with in times of slack demand, so long as there is a fixed capital investment to be remunerated.

Admitting that discrimination may still best be treated as a variation from type in competitive business, especially as the law seems to be taking a more and more decided stand against it, may not the other disturbances here treated be absorbed into the general statement of the law of competitive price ? One incidental result would be to throw new emphasis on the study of potential competition and the need of better and more systematized knowledge of its operation and effect — a need which at present is becoming increasingly evident.

J. M. CLARK.

AMHERST COLLEGE.